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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
AFTERGUT, JEFF H	
ART UNIT	**PAPER NUMBER**
1733	

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	**Application No.** 10/684,762	**Applicant(s)** ASHTON ET AL.	
	Examiner Jeff H. Aftergut	**Art Unit** 1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 27 February 2006.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1,2 and 4-14 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1,2 and 4-14 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)	4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1, 2, 4, 6-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Futakuchi et al in view of Angell, Jr. et al and Novak for the same reasons as expressed in paragraph 4 of the Office action dated 10-19-05 further in view of any one of Prochaska et al (newly cited), Fischer et al (newly cited), Youngkeit (newly cited), Matuska (newly cited) or Carrow (newly cited).

The references to Futakuchi et al Angell, Jr. et al and Novak suggested that those skilled in the art at the time the invention was made would have formed a composite material by selecting a resin which was solid or semi-solid at room temperature (Angell and Novak), heated the resin in order to render the same viscous enough to facilitate impregnation (Angell and Novak), and impregnated filaments with the viscous resin in order to form a filament arrangement. It should be noted that Futakuchi et al suggested that a filament band was impregnated with a resin material which was thermosetting resin material either in line or the fiber roving was preimpregnated. The reference to Angell and Novak suggested why one skilled in the art would have selected the semi-solid thermosetting resins therein and both heated the same to facilitate impregnation. Note that Futakuchi et al suggested the winding in the manner claimed and additionally the severing of the filament band from the mandrel after the winding operation. It should be noted that a roving is not a single filament but rather a plurality of filaments which are assembled together in a tow which is slightly twisted to stay together. It should be noted that the reference to Futakuchi et al failed to make mention of the specific width of the roving which was used in the winding operation. It being noted that one skilled in the art would have selected a suitable width fort the fiber roving as a function of the final product being manufactured.

The references to any one of Prochaska et al, Fischer et al , Youngkeit, Matuska or Carrow suggested that those skilled in the art would have known to provide a filament roving and/or band having a width of greater than 0.5 inches for a filament winding operation. More specifically, the reference to Matuska suggested that in a filament winding operation it was known to employ resin impregnated roving having a width between 0.1 to 1.0 inches in width (column 5, lines 31-39 and column 4, lines 40-54). Carrow suggested that it was known to employ a glass fiber band which was impregnated with resin having a width of 0.5 inches in the manufacture of the composite article therein, see column 6, lines 34-40 for the width of the roving band. Fischer et al suggested that a band width of between 0.5 to 2 cm (which is .197 to .787 inches) would have been provided where the filaments were impregnated with resin and utilized in the manufacture of a composite article. The reference to Youngkeit suggested that those skilled in the art would have employed a resin impregnated band having a width of 1 to two inches which the reference states is typical and a function of the article being manufactured, see column 3, lines 59-63. the reference to Prochaska et al suggested that those skilled in the art of filament winding would have employed bands of approximately 2 cm (0.787 inches) in width for the winding operation therein, see column 3, lines 59-63. The applicant is advised that as a function of the final product being produced one skilled in the art would have understood that various width roving would have been useful for the winding operation and such would have typically included roving which were at least 0.5 inches in width as evidenced by any one of Prochaska et al, Fischer et al, Youngkeit, Matuska or Carrow. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a winding band width of at least 0.5 inches as evidenced by any one of Prochaska et al, Fischer et al, Youngkeit, Matuska or Carrow was known in the art as useful in the manufacture of filament wound composite articles from such bands impregnated with resin wherein one skilled in the art would have known that therein employed in the operation included a solventless binder for impregnation of the filaments wherein such included a solid or semi-solid resin which was heated to facilitate impregnation as evidenced by Angell, Jr. and Novak (note that one would have utilized this resin because of its enhanced properties like elimination of solvent during impregnation for example) in the process of winding a perform for a composite article as taught by Futakuchi et al.

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references as set forth above in paragraph 2 further taken with any one of Carter, Young, Underwood or Hof for the same reasons as expressed in paragraph 5 of the Office action dated 10-19-05.

4. Claims 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as set forth above in paragraph 2 further taken with McKinney for the same reasons as expressed in paragraph 6 of the Office action dated 10-19-05.

Response to Arguments

5. Applicant's arguments with respect to claims 1, 2, and 4-14 have been considered but are moot in view of the new ground(s) of rejection.

The applicant argues that the reference to Futakuchi et al fails to teach each and every feature of the claimed invention. The claims have been amended to include such features and thus, it is agreed that the reference no longer anticipates the claimed invention. The applicant argues that the reference did not teach a resin which was solid or semi-solid at room temperature and which required heating in the operation of impregnating the roving. While the reference to Futakuchi taught the impregnation with a bath, it is correct that the reference did not depict the heating of the bath to render a solid or semisolid resin viscous enough for impregnation. This is because the reference did not expressly state that one skilled in the art would have employed a solid or semisolid resin for the impregnation operation. However, the references to Angell, Jr. and Novak both suggested that one skilled in the art would have employed a solid or semisolid resin in an impregnation operation for filaments wherein the resin was provided as a solid or semisolid at room temperature (a hot melt thermosetting resin) which was employed as a resin for a composite article as it eliminated volatiles in the impregnation operation and resulted in a void free composite article. It would have been obvious to those skilled in the art at the time the invention was made to employ a solid or semisolid resin at room temperature as such a resin had little or no solvent therein and would have been useful for manufacture of void free composite articles in the operation of Futakuchi et al.

The applicant also notes that Futakuchi et al employed a roving which was used in the winding operation and takes the position that a roving is not a filament band having a width of ½ an inch or more. The applicant is advised that the reference to either one of Matuska or Carrow clearly expressed that a roving would have had a width of 0.5 inch or greater. Additionally, the reference to Youngkeit clearly expressed that the width of the band being wound was directly related to the article being manufactured with the typical width being 1 to 2 inches. Additionally any one of Prochaska et al, Fischer et al, Youngkeit, Matuska or Carrow suggested that it was known to wind a band having a width greater than or equal to 0.5 inch in a filament winding operation. There is no unexpected benefit derived from the selection of the specific band width. The applicant is advised that one skilled in the art would have found it obvious at the time the invention was made to provide a roving with a width of 0.5 inch or more in the winding operation as such was commonplace in the art of filament winding when making composite articles via a filament winding operation. It should be noted that the claims previously did not define the band width.

The applicant argues that Futakuchi teaches away from the use of a solid or semisolid resin in the operation because the reference teaches that the resin was in a liquid state during the impregnation in the bath. This, however, does not in any way teach away from the use of a solid or semisolid resin. The applicant is advised that one skilled in the art would have understood that the heating of the resin in a solid form would have made the resin viscous and/or liquid enough for impregnation. Thus, employing the resins of Angell, Jr. and Novak in Futakuchi et al would have simply required the heating of the bath to render the resin liquid and suitable for the impregnating operation. The reference to Futakuchi et al therefore does not teach away from the use of a solid or semisolid resin, it merely doesn't expressly recite the use of the same which would have been motivated for the reasons identified above (less volatiles and voids in the finished assembly).

While it is agreed that the references to Angell, Jr and Novak do not directly relate to winding operation, they need not to render the claimed invention obvious. The reference to Futakuchi suggested the specific winding operation. The references to Angell, Jr and Novak were cited to show what kinds of resins would have been employed in the operation of Futakuchi et al. the references suggested that the use of a solid or semisolid resin would have been desirable for impregnation of a filament material in order to facilitate the formation of a void free article with less volatiles therein. Elimination of volatiles (solvent) during impregnation clearly would have been desirable in Futakuchi et al as well as the formation of a void free final composite article. Applicant's arguments have not been found persuasive in this regard.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff H. Aftergut whose telephone number is 571-272-1212. The examiner can normally be reached on Monday-Friday 7:15-345 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeff H. Aftergut

Primary Examiner
Art Unit 1733

JHA
April 6, 2006